

Fiscal Analysis of Proposed Amendment to 15A NCAC 18A .2508 and Adoption of and.2544 Special Purpose Therapy Pools

Agency: Commission for Public Health

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Authority: G.S. 130A-282

Impact Summary: State government: No
Local government: No
Private industry: Yes
Substantial impact: No

Purpose of Rules

The state Rules Governing Public Swimming Pools, 15A NCAC 18A.2500, are to protect the lives and health of citizens of and visitors to our state who use public swimming pools. They are adopted by the Commission for Public Health to regulate the design, construction, operation and inspection of public swimming pools by local health departments acting as agents of the Department of Health and Human Services. Rule .2544 is proposed for adoption to make it easier for some therapeutic pools and special training pools to be permitted for public use.

Basic Economic Impact

Currently pools used strictly for therapeutic uses within a licensed medical facility or the practice of a licensed physical therapist are allowed to vary from the North Carolina *Rules Governing Public Swimming Pools* (15A NCAC 18A .2500) through an exemption in G.S. 130A-280. As the population is aging, there is a desire to apply certain therapeutic uses of captive water to public places outside the medical field for physical fitness, athletic training and mental relaxation. These activities outside of medical use are subject to the rules. Compliance with certain rules will be problematic for some of the intended therapeutic water uses. This rule is to provide some specific exceptions to certain rules that will facilitate the marketing of therapy pools and athletic training pools, which is currently prohibited or restricted to medical uses through public venues. The greater accessibility of therapy pools to the public will provide health benefits that could reduce medical costs while ensuring the safety of those who will use pools.

Cost to the Public

The proposed rule is not anticipated to create any direct costs to the public. There are, however, some potential risks to users of isolation tanks and treadmill pools associated with this rule.

Isolation tanks are hooded and darkened while in use, so there is little observation possible should a person inside be distressed. Self-actuated alarms are common to summon help, but there is some risk drowning could occur unnoticed. The brine typically used in the tanks is heavy enough to float a person’s head and the pools are very shallow, so the chance of drowning is remote unless someone suffers seizure or other debilitation while in the tank. The risk of drowning in isolation float tanks is not believed to be any greater than would be expected in other types of public swimming pools.

Treadmill pools have moving parts, and there is some potential for exercise injury. Underwriters Laboratories has standards for safe construction of treadmills, which have already been incorporated into these rules. There are not enough treadmill pools currently in use to provide any assessment of the prevalence or costs of injuries associated with underwater treadmills.

Benefits to the Public

The benefits to the public will be the ability to participate in relaxation therapy by floating in isolation tanks, physical fitness by making underwater treadmill exercise available to the public, making use of above-ground swim spas for training elite swimmer athletes and allowing specially designed pools for scuba diving. These therapeutic opportunities may reduce stress levels among participants, improve mobility in older adults, provide appropriate facilities for scuba training and give elite swimmer athletes an opportunity to hone their competitiveness. Additional potential benefits to older adults using treadmill pools may include protection from falls, reduced disability from fragility fractures, and reduced medical costs if fall-related injuries are avoided.

Scuba diving puts some stresses on the human body that may trigger some potential health effects. Having specially-designed pools for scuba training may reduce risks to divers in open-water dives by recognizing and correcting problems in a controlled environment before entering open water.

Costs to Business

Several of the options offered in this rule have stipulations that can add cost for businesses. The current filtration equipment requirement for constant filtration at a rate to filter the contents of small therapeutic pools once every 30 minutes is being altered to allow isolation float tanks to provide the same number of filtration cycles by upsizing pumps, filters and pipes to filter the water intermittently between users. This is not a requirement, but if the operators choose this option it could add about \$1,500 to their construction cost. The requirement for above-ground swim spas to be in a secure enclosure will require a lock on the gate or door that is not currently required for in-ground pools. Gates can be locked with a padlock and chain for about \$15, but door locks for indoor pools could be about \$300 with emergency egress hardware.

Benefits to Businesses

The proposed rule will benefit manufacturers and builders of therapeutic pools by broadening the potential market for therapy pools. Isolation tanks are currently prohibited and treadmill pools have not been permitted for use outside medical settings. This rule will allow a relaxation therapy popular throughout Europe to be employed by small businesses in North Carolina. The potential economic benefits are difficult to predict, but in Europe, float centers are a successful business model comparable to massage therapy spas in this country. Isolation tank therapy has seen some popularity in California and several other western states but is so new to the United States that no data is available that will predict the potential popularity or economic benefit to be derived from float centers in North Carolina. Two potential providers are currently interested in pursuing this business opportunity.

Treadmill pools are used primarily in physical therapy practices, but the manufacturers see the potential to market to high-end continuing care retirement communities where enhanced mobility, flexibility, balance and coordination developed through water-assisted exercise may be very beneficial to the well-being of residents and could potentially reduce medical costs. Information from the Centers for Disease Control Home and Recreational Safety website indicates that among older adults (those 65 or older), falls are the leading cause of injury death. Falls are also the most common cause of nonfatal injuries and hospital admissions for trauma. In

2010, 2.3 million nonfatal fall injuries among older adults were treated in emergency departments and more than 662,000 of these patients were hospitalized. In 2010, the direct medical costs of falls, adjusted for inflation, was \$30.0 billion.⁽¹⁾

Treadmill pool manufacturers hope promoting use of underwater treadmills to facilitate exercise among people who have difficulty walking and balancing could reduce the incidence of falls and delay hospitalization or nursing home admissions that might otherwise occur at great physical and emotional cost to the residents and financial cost to continuing care providers. Continuing care contracts are a form of insurance that pays providers an up-front fee to care for a person until death, so savings on medical costs may slightly improve profitability for providers and/or modestly reduce contract fees. One provider has requested a permit to use an existing treadmill pool for residents not currently under medical care.

Proposed provision .2544(d) will allow swim spas to reduce their turnover rate from 30 minutes to two hours, which may result in cost savings for pump, filter and piping of about \$1,000 per pool constructed and some ongoing energy savings from operation costs. This change is necessary because the 30-minute turnover rate appropriate for small hot spas with many users and high heat, which produce a heavy load of bather waste and use up chemicals rapidly, is not necessary for swim spas designed for lower temperatures and only one or two swimmers. Swim spas are a hybrid between a swimming pool and a spa, and their larger volume and lower bather load make a 30-minute turnover an unnecessary expense. A two-hour turnover rate is appropriate for these pools. Swimming pools, by contrast, must meet a six-hour turnover rate.

Swim spas are currently being permitted as in-ground exercise pools, but the above-ground models are being marketed to swimmer training facilities to aid swim coaches in viewing swim strokes up close at eye-level. The change to allow above-ground installation where use is under constant supervision of a swim coach gives the manufacturers of these exercise pools an opportunity to appeal to coaches who may want to use these as a training tool. A declaratory ruling was made to allow installation of one of these pools for training Olympic athletes, and another is in the planning stage of development. The provision allowing filtration turnover rate to be reduced from every 30 minutes to every 2 hours (.2544(d)) may modestly reduce costs for pumps, filters, and piping, providing a potential cost reduction of as much as \$1,000 per pool as well as a potential reduction in ongoing costs related to energy consumption.

North Carolina has an active scuba diving community which is in need of a new facility to train scuba divers. The current restrictions on underwater ledges and maximum slope of pool bottoms prevent the kind of pool bottom drop-off needed to provide practice dives to a significant depth. The proposed rule will allow pools designed to train swimmers to use self-contained underwater breathing apparatus to have the depth drops needed for that activity. One of these pools is in the early planning stage of development.

Impact on State Appropriations

The proposed rule will not have an impact on state appropriations.

Impact on Local Governments

The proposed rule will not have a direct impact on local government expenditures. However, some new types of aquatic and therapeutic facilities may be constructed and added to the inspection load of local health departments. Local boards of health have authority to charge permit fees to pool owners to recoup inspection costs.

Alternatives

The alternative of leaving the rules as they are will prevent isolation tanks from being permitted and will prevent use of above-ground swim spas for training swimmers up-close. Treadmill pools can be made to meet the current rules. The Department has made use of declaratory rulings to allow some special designs to be used under limited circumstances but feels that the rules should provide design flexibility consistent with those rulings. Manufacturers and their prospective clients have requested the relief provided by the proposed rule.

Footnotes

(1) Centers for Disease Control "Falls Among Older Adults: An Overview,
<http://www.cdc.gov/homeandrecreationalafety/falls/adultfalls.html>

Sources:

Hornbrook MC, Stevens VJ, Wingfield DJ, Hollis JF, Greenlick MR, Ory MG. Preventing falls among community-dwelling older persons: results from a randomized trial. *The Gerontologist* 1994;34(1):16-23.

Stevens JA. Fatalities and injuries from falls among older adults – United States, 1993–2003 and 2001–2005. *MMWR* 2006a;55(45).

15A NCAC .2508 Definitions is proposed for amendment as follows:

15A NCAC 18A .2508 DEFINITIONS

The following definitions apply throughout this Section:

- (1) Equipment replacement means replacement of individual components of the hydraulic and disinfection systems such as pumps, filters, and automatic chemical feeders.
- (2) Public swimming pool means public swimming pool as defined in G.S. 130A-280. Public swimming pools are divided into ~~four~~ five types:
 - (a) Swimming pools are public swimming pools used primarily for swimming.
 - (b) Spas are public swimming pools designed for recreational and therapeutic use that are not drained, cleaned, or refilled after each individual use. Spas may include units designed for hydrojet circulation, hot water, cold water mineral bath, air induction bubbles, or any combination thereof. Common terminology for spas includes "therapeutic pool", "hydrotherapy pool", "whirlpool", "hot spa", and "hot tub".
 - (c) Wading pools are public swimming pools designed for use by children, including wading pools for toddlers and children's activity pools designed for casual water play ranging from splashing activity to the use of interactive water features placed in the pool.
 - (d) Specialized water recreation attractions are pools designed for special purposes that differentiate them from swimming pools, wading pools and spas. They include:
 - (i) water slide plunge pools and run out lanes;
 - (ii) wave pools;
 - (iii) rapid rides;
 - (iv) lazy rivers;
 - (v) interactive play attractions that incorporate devices using sprayed, jetted, or other water sources contacting the users and that do not incorporate standing or captured water as part of the user activity area; and
 - (vi) training pools deeper than a 24 inch deep wading pool and shallower than a 36 inch deep swimming pool.
 - (e) Special purpose therapy pools are pools designed and used for therapeutic treatments or physical training and fitness outside of a licensed medical facility or practice of a licensed physical therapist. They include:
 - (i) float tanks used for float therapy in a salt brine solution;
 - (ii) swim spa training pools which use jetted water for stationary swimming against a water current;
 - (iii) exercise therapy and treadmill pools equipped for water resistance exercise therapy; and

(iv) scuba pools designed and used for training swimmers to use self-contained underwater breathing apparatus.

- (3) Registered Design Professional means an individual who is registered or licensed to practice engineering as defined by G.S. 89C or architecture as defined by G.S. 83A.
- (4) Remodeled means renovations requiring disruption of the majority of the pool shell or deck, changes in the pool profile, or redesign of the pool hydraulic system.
- (5) Repair means returning existing equipment to working order, replastering or repainting of the pool interior, replacement of tiles or coping and similar maintenance activities. This term includes replacement of pool decks where the Department has determined that no changes are needed to underlying pipes or other pool structures.
- (6) Safety vacuum release system means a system or device capable of providing vacuum release at a suction outlet caused by a high vacuum occurrence due to suction outlet flow blockage.
- (7) Splash zone means the area of an interactive play attraction that sheds water to a surge tank or container to be recirculated.
- (8) Unblockable drain means a drain of any size and shape that a human body cannot sufficiently block to create a suction entrapment hazard.

History Note: Authority G.S. 130A-282;

15 NCAC 18A.2544 is proposed for adoption as follows:

15A NCAC 18A .2544 SPECIAL PURPOSE THERAPY POOLS

(a) Special purpose pools shall comply with the requirements for public swimming pools and spas except as specified in this rule.

(b) Float tanks

- (1) The requirement in rule .2522 of this section for a deck or walkway continuous with the top of the pool wall does not apply to isolation float tanks where a clear floor space of at least eight feet by four feet is provided adjacent to the entrance to the tank.
- (2) The requirement in rule .2532 of this section for the minimum ceiling height of 7 ½ feet above the rim of the pool does not preclude use of a canopy of a lower height to enclose an isolation float tank provided the canopy can be opened to allow users a standing entry and exit from the float tank.
- (3) The minimum lighting requirement in rule .2524 of this section does not apply to float tanks provided lighting is available for cleaning and is sufficient to provide visibility for entry and exit from the float tank.
- (4) The requirements in rule .2518 that recirculation pumps operate 24 hours per day do not preclude turning off the pump during float sessions where a sanitizing cycle is provided that filters and disinfects the entire capacity of the float tank system at least twice before every user enters the pool. When the float tank is not being used the pump shall either operate continuously or intermittently to filter and disinfect the capacity of the pool twice every hour.
- (5) The requirement in rule .2518 of this section that pool pumps three horsepower or smaller meet NSF/ANSI Standard 50 is not applicable where the mineral content of the brine in a float tank is incompatible with standard pool pumps. Pumps that do not meet NSF/ANSI standard 50 shall be approved on where the viscosity of the mineral solution in the float tank requires a pump impeller or magnetic coupling designed to pump viscous liquids. Electrical safety of such pumps shall be verified by an independent third-party testing lab to meet applicable Underwriters Laboratories (UL) Standards.
- (6) The requirement in rule .2532 of this section for a caution sign at spas with a water temperature above 90 degrees Fahrenheit is not applicable to float tanks that do not exceed an operating temperature of 95 degrees Fahrenheit. Float tanks that exceed an operation temperature of 95 degrees Fahrenheit shall have a posted sign with the same warnings required for hot spas except references to spas may be reworded to reference float tanks or float spas.

(c) Swim Spas

- (1) Irrespective of paragraph .2522 (k) of this section swim spa training pools that use jetted water for training swimmer athletes under constant supervision of a swim coach may be located above deck level. Swim spa training pools located above deck level shall be in an enclosure secured against unauthorized access or use when a swim coach is not present.
- (2) The maximum operational water depth of 4 feet required for spas in rule .2532 of this section does not apply to swim spas.

(3) Ladders, steps or stairs required by rule .2521 of this section are not required for an above-ground swim spa where a handhold or handrail is provided to facilitate transfer over the pool wall.

(d) Exercise Therapy and Treadmill Pools

(1) The maximum operational water depth of 4 feet required for spas in rule .2532 of this section does not apply to exercise therapy and treadmill pools.

(2) The 30 minute turnover rate required for spa recirculation systems in rule .2532 of this section does not apply to exercise therapy or treadmill pools with a water capacity exceeding 1,000 gallons provided that the turnover time does not exceed two hours.

(e) Scuba Training Pools

(1) The prohibition of underwater ledges in rule .2516(b) of this section does not preclude drop-off ledges to the deep-diving portion of pools designed and used for training swimmers to use self-contained underwater breathing apparatus.

(2) Scuba pools shall comply with the requirements for swimming pools and are not required to meet the requirements for spas in rule .2532 of this section.

History Note: Authority G.S. 130A-282;